

COMP 529: Cloud Computing Spring 2019

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Instructor

Michael Soltys

michael.soltys@csuci.edu

<http://www.msoltys.com>

Bell Tower West 2265

Office hours: Tuesdays 2:00-4:00

Course Information

COMP 529

Lecture time & place: Thursday 6:00-9:00, Sierra Hall 1131

Course web page: http://www.msoltys.com/?page_id=4255

Course Description

This course is an introduction to Cloud Computing using Amazon Web Services (AWS). It covers distributed systems on the Internet, and in particular computing with virtual clients and servers, online storage and databases, and networking.

Prerequisite: An undergraduate level understanding of networking (at CI COMP 429) and cybersecurity (at CI COMP 424, or COMP 524).

Student Learning Outcomes

Upon a successful completion of the course you will be able to:

1. Understand and know the fundamental concepts and definitions of Cloud Computing
2. Know how to manage AWS virtual servers, storage, databases and networking in the cloud
3. Knowledge of the curriculum in the *AWS Cloud Computing Architect* certification

Course Outline

Tentative list of topics in order of lectures:

1. Jan 24: Intro to AWS
2. Jan 31: S3 and Glacier storage

3. Feb 7: EC2 and EBS
4. Feb 14: Virtual Private Cloud (VPC)
5. Feb 21: Load balancing, auto scaling and CloudWatch
6. Feb 28: Identity and Access Management (IAM)
7. March 7: Databases
8. March 14: **MIDTERM**
9. March 21: **SPRING BREAK WEEK**
10. March 28: SQS, SWF and SNS; DNS and Route 53
11. April 4: ElastiCache & Additional key services
12. April 11: *Instructor at conference, home assignment instead of lecture*: create an EC2 based webserver with Wordpress installed, and one post posted; submit the URL of the post to the instructor for part of the attendance grade¹.
13. April 18: Security on AWS; Risk and compliance.
14. April 25: Architecture Best Practices. Assignment: Use the AWS instructions on setting up SSL² to configure your Wordpress EC2 server to use SSL/TLS. Submit the https URL to the instructor for part of the attendance grade. Note that I expect your URL to produce an error in the browser, as your certificate will be self-signed.
15. May 2: *Instructor at conference, home assignment instead of lecture*: create two S3 buckets, `my-bucket-1` and `my-bucket-2`, and then create a user, and a policy for that user that allows the user to read `my-bucket-1` and read-write `my-bucket-2`. Submit the json file with policy to instructor for part of the attendance grade.
16. May 9: **FINAL EXAM**

Textbook

There is no required textbook, and the content of will be given in lectures and by reading white papers. However, we are going to follow the curriculum as outline in “*AWS Certified Solutions Architect Official Study Guide*”, by Joe Baron, Hisham Baz, Tim Bixler, Biff Gaut, Kevin E. Kelly, Sean Senior and John Stamper, published by John Wiley & Sons, 2017.

¹Reference: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/hosting-wordpress.html>

²Reference: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/SSL-on-an-instance.html>

Grading

1. Quizzes and labs, graded for attendance only, 20%
2. Midterm, 30%
3. Final Exam, 50%

Policies

1. **Academic Dishonesty:** By enrolling at CSU Channel Islands, students are responsible for upholding the University's policies and the Student Conduct Code. Academic integrity and scholarship are values of the institution that ensure respect for the academic reputation of the University, students, faculty, and staff. Cheating, plagiarism, unauthorized collaboration with another student, knowingly furnishing false information to the University, buying, selling or stealing any material for an examination, or substituting for another person may be considered violations of the Student Conduct Code (located at <http://www.csuci.edu/campuslife/student-conduct/academic-dishonesty.htm>). If a student is found responsible for committing an act of academic dishonesty in this course, the student may receive academic penalties including a failing grade on an assignment or in the course, and a disciplinary referral will be made and submitted to the Dean of Students office. For additional information, please see the faculty (located at <https://senate.csuci.edu/policies/2013-2014/sp-13-06-policy-on-academic-dishonesty-rev-oct2016.pdf>), also in the CI Catalog.

The assignments will be written in groups. Each group has to work independently of the other groups; verbal discussions of problems among groups are allowed, but you should not show written notes, and you should not leave such discussions with written notes. Please speak to the instructor if these expectations are not clear.

2. **Disability Statement:** If you are a student with a disability requesting reasonable accommodations in this course, please visit Disability Accommodations and Support Services (DASS) located on the second floor of Arroyo Hall, or call 805-437-3331. All requests for reasonable accommodations require registration with DASS in advance of need: <https://www.csuci.edu/dass/students/apply-for-services.htm>. Faculty, students and DASS will work together regarding classroom accommodations. You are encouraged to discuss approved accommodations with your faculty.
3. **Course Policies Subject to Change:** It is the student's responsibility to check the course's web page frequently to stay abreast of the course, and for corrections or updates to the syllabus. Any changes will be posted there.